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System of active regulation of the temperature and temperature gradient in nuclear magnetic resonance sensors

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Abstract

An active system of temperature regulation and temperature gradient in a sample on the example NMR sensor is described in this work. By supporting the given average temperature, the system of temperature-stabilization allows one to set and supervise the size and direction of the temperature gradient along a sample. The temperature of a sample is maintained with on accuracy of about ±0.1°C in a temperature interval of-150 to +200°C with a longitudinal temperature gradient no more than ±0.2°C. The value of the temperature gradient is established in the range of 0° to 10°C/cm in both directions. © 1998 MAHK Hayka/Interperiodica Publishing.